

**AMENDMENTS TO THE CLAIMS**

This listing of the claims will replace all prior versions and listing of the claims in the Subject Application:

**Listing of Claims**

1. (Currently amended) A nanomaterial comprising chalcogenide wherein the nanomaterial has an aspect ratio greater than 5 and less than or equal to 25, and wherein the nanomaterial is transformed to nonstoichiometric after formation.
- 2-3. (Canceled)
4. (Withdrawn) A metallic nanomaterial having an aspect ratio greater than 2.
5. (Original) A product comprising nanomaterial of claim 1.
6. (Withdrawn) The metallic nanomaterial of claim 4 wherein the nanomaterial comprises an element selected from the group: silver, gold, platinum, palladium, ruthenium, copper, tantalum, niobium, indium and rare earth elements.
7. (Withdrawn) A product comprising nanomaterial of claim 4.
8. (Withdrawn) An inorganic nanomaterial comprising nitrogen wherein the nanomaterial has an aspect ratio greater than 2.
9. (Withdrawn) A product comprising nanomaterial of claim 8.
10. (Withdrawn) An non-stoichiometric nanomaterial comprising oxygen wherein the nanomaterial has an aspect ratio greater than 2.
11. (Withdrawn) A product comprising nanomaterial of claim 10.

12. (Withdrawn) An inorganic nanomaterial comprising phosphorus wherein the nanomaterial has an aspect ratio greater than 2.
13. (Withdrawn) A product comprising nanomaterial of claim 12.
14. (Withdrawn) A polymeric nanomaterial having an aspect ratio greater than 2.
15. (Withdrawn) A product comprising nanomaterial of claim 14.
16. (Withdrawn) A non-oxide nanomaterial having plate like morphology and an aspect ratio greater than 5.
17. (Withdrawn) The non-oxide nanomaterial of claim 16 wherein the nanomaterial is non stoichiometric.
18. (Withdrawn) A product comprising the nanomaterial of claim 16.
19. (Currently amended) A nanomaterial with faceted morphology having an aspect ratio greater than 5 and less than or equal to 25, and wherein the nanomaterial is transformed to non-stoichiometric after formation.
20. (Original) A product comprising the nanomaterial of claim 19.
21. (Previously presented) The nanomaterial of claim 1 wherein the chalcogenide comprises sulfur.
22. (Previously presented) The nanomaterial of claim 1 wherein the chalcogenide comprises selenium.

23. (Previously presented) The nanomaterial of claim 1 wherein the chalcogenide comprises tellurium.
24. (Withdrawn) The nanomaterial of claim 4 wherein the nanomaterial comprises two or more elements.
25. (Withdrawn) The nanomaterial of claim 8 wherein the nanomaterial comprises three or more elements.
26. (Withdrawn) The nanomaterial of claim 10 wherein the nanomaterial comprises three or more elements.
27. (Withdrawn) The nanomaterial of claim 12 wherein the nanomaterial comprises three or more elements.
28. (Previously presented) The nanomaterial of claim 1 wherein the surface of the nanomaterial has been reacted with a precursor.
29. (Withdrawn) The nanomaterial of claim 4 wherein the surface of the nanomaterial has been reacted with a precursor.
30. (Withdrawn) The nanomaterial of claim 8 wherein the surface of the nanomaterial has been reacted with a precursor.
31. (Withdrawn) The nanomaterial of claim 10 wherein the surface of the nanomaterial has been reacted with a precursor.
32. (Withdrawn) The nanomaterial of claim 12 wherein the surface of the nanomaterial has been reacted with a precursor.

33. (Currently amended) A nanomaterial comprising chalcogenide wherein the nanomaterial has an aspect ratio greater than 5 and less than 25, and wherein the nanomaterial is transformed to nonstoichiometric after formation.

34. (Previously presented) A product comprising nanomaterial of claim 33.

35. (Withdrawn) An inorganic nanomaterial comprising nitrogen wherein the nanomaterial has an aspect ratio greater than 2 and less than 25.

36. (Withdrawn) A product comprising nanomaterial of claim 35.

37. (Withdrawn) A non-stoichiometric nanomaterial comprising oxygen wherein the nanomaterial has an aspect ratio greater than 2 and less than 25.

38. (Withdrawn) A product comprising nanomaterial of claim 37.

39. (Withdrawn) An inorganic nanomaterial comprising phosphorus wherein the nanomaterial has an aspect ratio greater than 2 and less than 25.

40. (Withdrawn) A product comprising nanomaterial of claim 39.

41. (Withdrawn) A polymeric nanomaterial with aspect ratio greater than 2 and less than 25.

42. (Withdrawn) A product comprising nanomaterial of claim 41.

43-45. (Canceled)

46. (New) The nanomaterial of claim 1 wherein the nanomaterial is transformed to nonstoichiometric by at least one of heating in a reducing atmosphere, heating in inert atmosphere, heating in oxidizing atmosphere, solvent extraction, electrochemical transformation, electromagnetic field treatment, ion beam treatment, electron beam treatment, photonic treatment, rapid quench, plasma treatment, nuclear radiation, supercritical phase treatment, biological treatment, or a combination thereof.

47. (New) The nanomaterial of claim 19 wherein the nanomaterial is transformed to nonstoichiometric by at least one of heating in a reducing atmosphere, heating in inert atmosphere, heating in oxidizing atmosphere, solvent extraction, electrochemical transformation, electromagnetic field treatment, ion beam treatment, electron beam treatment, photonic treatment, rapid quench, plasma treatment, nuclear radiation, supercritical phase treatment, biological treatment, or a combination thereof.

48. (New) The nanomaterial of claim 1 wherein said nanomaterials have the formula



wherein M can be any element that can lower its free energy by chemically bonding with Z;

wherein Z is a chalcogenide;

wherein n and p are integers greater than or equal to 1; and

wherein  $0.01 < x < 0.99$ .

49. (New) The nanomaterial of claim 48, wherein M is selected from the group consisting of: Ti, Mn, Fe, Ni, Zn, Cu, Sr, Y, Zr, Ta, W, Sc, V, Co, In, Li, Hf, Nb, Mo, Sn, Sb, Al, Ce, Pr, Be, Np, Pa, Gd, Dy, Os, Pt, Pd, Ag, Eu, Er, Yb, Ba, Ga, Cs, Na, K, Mg, Pm, Pr, Ni, Bi, Tl, Ir, Rb, Ca, La, Ac, Re, Hg, Cd, As, Th, Nd, Th, Md, and Au.